



## NOAA In Your State

# Minnesota

***NOAA is an agency that enriches life through science. Our reach goes from the surface of the sun to the depths of the ocean floor as we work to keep citizens informed of the changing environment around them. From daily weather forecasts, severe storm warnings, and climate monitoring to fisheries management, coastal restoration and supporting marine commerce, NOAA's products and services support economic vitality and affect more than one-third of America's gross domestic product. NOAA's dedicated scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers and other decision makers with reliable information they need when they need it.***

***The following is a summary of NOAA facilities, staff, programs, or activities based in, or focused on, your state or territory: Starting with highlights, then by [congressional districts and cities or towns](#), [Great Lakes programs](#), and then [statewide programs](#).***

### ***Highlights of NOAA in Minnesota***

<a href="#">North Central River Forecast Center</a>	Chanhassen	MN-3
<a href="#">St. Louis River Estuary Habitat Focus Area</a>	Duluth	MN-8
<a href="#">Great Lakes Bay-Watershed Education and Training Program</a>	Great Lakes	MN

The state of Minnesota also has two Weather Forecasting Offices, one Science on a Sphere® exhibition, and one Habitat Focus Area.

### **Weather Forecast Offices**

Twin Cities; Chanhassen MN-3

Duluth MN-8

**National Weather Service (NWS) Weather Forecast Offices (WFO)** are staffed 24/7/365 and provide weather, water, and climate forecasts and warnings to residents of Minnesota. There are 122 WFOs nationwide of which two are in Minnesota. Highly trained forecasters issue warnings and forecasts for weather events, including severe thunderstorms, tornadoes, hurricanes, winter storms, floods, and heat waves to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including wireless emergency alerts, social media, [weather.gov](http://weather.gov), and NOAA Weather Radio All Hazards. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs that strengthen working relationships with local partners in emergency management, government, the media and academic communities. Forecasters provide Impact-based Decision Support Services (IDSS), both remotely and on-site during critical emergencies such as wildfires, floods, chemical spills, and major recovery efforts. To gather data for forecasting and other purposes, NWS WFO staff monitor, maintain and use Automated Surface Observing Stations and Doppler Weather Radar. In addition to the WFOs, NWS operates specialized national prediction centers and regional headquarters throughout the U.S. for a total of 168 operational units. Over 85% of NWS' workforce is in the field. For current Minnesota weather, visit [www.weather.gov](http://www.weather.gov) and, on the national map, click on the relevant county or district.

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### **Science On a Sphere®**

St. Paul MN-4

**Science On a Sphere (SOS)** is a room-sized global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain in a way that is simultaneously intuitive and captivating what are sometimes complex environmental processes. It is located at the Science Museum of Minnesota.

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#### **MN-2**

##### **Farmington**

##### **National Weather Service (NWS) - Center Weather Service Unit**

Housed in the Federal Aviation Administration's Minneapolis Air Route Traffic Control Center (ARTCC), the NWS Center Weather Service Unit (CWSU) provides forecasts and other weather information to ARTCC personnel for use in directing the safe, smooth flow of aviation traffic in Minnesota, North Dakota, most of South Dakota, Wisconsin and Michigan, and parts of Nebraska and Iowa.

#### **MN-3**

##### **Chanhassen**

##### **National Weather Service (NWS) - National Operational Hydrologic Remote Sensing Center**

Co-located with the NWS North Central River Forecast Center and the Twin Cities NWS Weather Forecast Office, the National Operational Hydrologic Remote Sensing Center (NOHRSC) provides remotely-sensed and modeled hydrology

products for the coterminous U.S. and Alaska for the protection of life and property and the enhancement of the national economy. NOHRSC airborne, satellite, and modeled snow data and products are used by NWS, other government agencies, the private sector, and the public to support operational and research hydrology programs across the nation. NOHRSC data and products include national analyses of snow water equivalent, snow depth, average snowpack temperature, snow precipitation, snow melt, and sublimation. Snow water equivalent data from NOHRSC is critical to determine spring flooding and spring mountain runoff in the west. A user-driven interactive interface and 3-D visualization capability enables for full exploration of the available data sets.

**National Weather Service (NWS) - [North Central River Forecast Center](#)**

Co-located in Chanhassen with the Twin Cities NWS Weather Forecast Office and the NWS National Operational Hydrologic Remote Sensing Center, the NWS North Central River Forecast Center (RFC) performs continuous river basin modeling and provides hydrologic forecast and guidance products for rivers and streams in Minnesota, Michigan, Wisconsin, and parts of North Dakota, Missouri, Illinois, Iowa and Indiana. These products include forecasts of river stage and flow, probabilistic river forecasts, reservoir inflow forecasts, gridded precipitation estimates and forecasts, spring flood outlooks, and flash flood and headwater guidance. Some of the RFCs in the western and central U.S. also provide water supply forecasts. RFCs work closely with local, state and federal water management agencies, including the U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, and U.S. Geological Survey, to provide water and flood information for critical decisions (aka Impact-based Decision-Support Services or IDSS).

**National Weather Service (NWS) - [Weather Forecast Office](#)**- See [Page 2](#) for details.

**National Ocean Service (NOS) - [Office for Coastal Management](#)**

The NOAA Office for Coastal Management practices a partner-based, boots on the ground approach to coastal management. The organization currently has staff in the eight regions who provide assistance to local, state, and regional coastal resource management efforts and facilitate customer feedback and assessments. Great Lakes regional staff are located in Chanhassen and Duluth, MN, Chicago, IL and Traverse City, MI. In addition to providing NOAA products and services, these staff represent NOAA on multiple regional governance structures, including but not limited to, the Great Lakes Restoration Initiative and the Great Lakes Regional Collaboration to improve the management of natural resources.

**[MN-4](#)**

**[St. Paul](#)**

**NOAA Office of Education — [Environmental Literacy Program](#)**

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In Minnesota, ELP supports the Science Museum of Minnesota (Ramsey), which has a permanent exhibit featuring NOAA's Science On a Sphere (SOS) and is a member of NOAA's SOS Users Collaborative Network (SOS Network). The SOS Network connects over 150 science education institutions worldwide to the latest NOAA data as part of a focused effort to increase environmental literacy at all ages.

**Office of Oceanic and Atmospheric Research (OAR) - [Science On a Sphere®](#)** - See [Page 2](#) for details.

**[MN-7](#)**

**[Goodridge](#)**

**Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for

placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

## **MN-8**

### ***Cloquet***

#### **NOAA Office of Education — [Environmental Literacy Program](#)**

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In Minnesota, ELP funded the Fond du Lac Tribal and Community College (Carlton) to build the environmental literacy of children, youth, and adults so they are knowledgeable of the ways in which their community can become more resilient to extreme weather, climate change, and other environmental hazards, and become involved in achieving that resilience. Working with University of Wisconsin Extension, Fond du Lac Tribal and Community College's project is increasing the knowledge and readiness of middle to high school students to deal with the impacts of extreme weather and environmental hazards that face the Ojibwe Ceded Territories. Ultimately, this culturally-relevant place-based education project will enable communities to critically assess community resilience to extreme weather events and engage in action in order to resolve it.

### ***Duluth, Grand Marais***

#### **National Ocean Service (NOS) - [National Water Level Observation Network](#)**

The National Ocean Service (NOS) operates two long-term continuously operating water level stations in the state of Minnesota, which provide data and information on Great Lakes and interconnecting waterways datum and lake level regulation and are capable of producing real-time data for storm surge warning. These stations are located on Lake Superior at Duluth and at Grand Marais.

### ***Duluth***

**National Weather Service (NWS) - [Weather Forecast Office](#)**- See [Page 2](#) for details.

#### **National Ocean Service (NOS), National Marine Fisheries Service (NMFS), Office of Oceanic and Atmospheric Research (OAR), National Weather Service (NWS), National Centers for Environmental Information/Regional Climate Services (NESDIS) - [St. Louis River Estuary Habitat Focus Area](#)**

As part of the Habitat Blueprint administered by the NOAA Fisheries Office of Habitat Conservation, NOAA has selected ten Habitat Focus Areas (HFAs), place-based locations across the country to maximize the effectiveness of habitat conservation. While each HFA focuses on individual habitat conservation goals outlined in their Implementation Plan, the overarching goal is to demonstrate results in a focused area in a short time period. The St. Louis River Estuary has been selected as a Habitat Focus Area. NOAA is coordinating its efforts across the National Ocean Service, NOAA Fisheries, Weather Service and Great Lakes Environmental Research Lab, Satellites and Regional Climate Services and partner within the St. Louis River Estuary Habitat Focus Area. Partners include: the Lake Superior National Estuarine Research Reserve, the Wisconsin and Minnesota Coastal Management Programs, Minnesota and Wisconsin Sea Grants, and NOAA's Sentinel Site for climate monitoring. The St. Louis River is a major tourism draw and home to the country's busiest and largest bulk inland port. Current and former industry has left a legacy of toxic substances, along with extensive habitat alteration and degradation. NOAA is bringing its expertise in flood and weather forecasting, integrated monitoring, habitat protection and restoration, stakeholder education, and coastal management to the restoration effort to address loss of fish and wildlife habitat and sport fisheries, assess impacts of climate on aquatic and nearshore vegetation, reducing the risk of flooding through improved planning and water management strategies, and increasing coastal tourism, access, and recreational opportunities.

## **Sandstone**

### **Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

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## **Great Lakes**

### **National Marine Fisheries Service (NMFS) - [Restoration Center](#)**

The NOAA Restoration Center, within the Office of Habitat Conservation, works with private and public partners locally and nationwide to increase fisheries productivity by restoring coastal habitat. Projects support sustainable fisheries, help recover threatened and endangered species, and reverse damage from disasters like oil spills, ship groundings, and severe storms. Since 1992, they have provided more than \$750 million to implement more 3,300 coastal habitat restoration projects. In the Great Lakes including Minnesota, the Restoration Center focuses on restoring the most degraded environments--designated Areas of Concern. For example, NOAA is working with the Great Lakes Restoration Initiative (GLRI) to implement habitat restoration projects that will help improve Areas of Concern.

### **National Marine Fisheries Service (NMFS) and National Ocean Service (NOS) - [Damage Assessment, Remediation, and Restoration Program](#)**

NOAA's Damage Assessment, Remediation, and Restoration Program (DARRP) assesses and restores habitat, fisheries, protected species and recreational uses that have been harmed by oil spills, chemical releases, and ship groundings. Working with federal, state, and tribal entities, and responsible parties, we have recovered funding from responsible parties for restoration of critical habitats, fisheries, protected species and recreational uses nationwide. These projects promote recovery of the ecosystem and provide economic benefits from tourism, recreation, green jobs, coastal resiliency, property values and quality of life. In Minnesota, the Program is currently working to restore natural resources in cases including the St. Louis River/Interlake and the St. Louis River/U.S. Steel hazardous waste sites.

### **National Ocean Service (NOS) – [National Coastal Zone Management Program](#)**

Through a unique federal-state partnership, NOAA's Office for Coastal Management works with the Minnesota Department of Natural Resources to implement the National Coastal Zone Management Program in Minnesota. NOAA provides the state coastal management program with financial and technical assistance to further the goals of the Coastal Zone Management Act and ensure coastal waters and lands are used in a balanced way to support jobs, reduce use conflicts, and sustain natural resources.

### **National Ocean Service (NOS) – [Digital Coast](#)**

The Digital Coast is a focused information resource developed to meet the unique needs of coastal communities. Developed and maintained by NOAA's Office for Coastal Management, content comes from hundreds of organizations, including federal, state, and local agencies, plus private sector and non-profit contributors. The Digital Coast website provides not only site-specific coastal data, but also related the tools, training, and information needed to make these data useful for coastal decision makers.

**National Ocean Service (NOS) - [Coastal Management Fellowship](#)**

This program matches postgraduate students with state and territory coastal zone programs to work on two-year projects proposed by the state or territory. Minnesota's Lake Superior Coastal Management Program is hosting a fellow from 2019-2021 who will provide data, tools, and resources to area practitioners and landowners tackling Lake Superior erosion in Minnesota.

**National Ocean Service (NOS) - [Great Lakes Bay Watershed Education and Training Program](#)**

The NOAA Bay Watershed Education and Training (B-WET) program is an environmental education program that promotes locally relevant, experiential learning in the K-12 environment. The primary delivery of B-WET is through competitive funding that promotes Meaningful Watershed Educational Experiences (MWEEs). B-WET currently serves seven areas of the country: California, Chesapeake Bay, Great Lakes, Gulf of Mexico, Hawai'i, New England, and the Pacific Northwest. The Great Lakes B-WET program recognizes that knowledge and commitment built from firsthand experience, especially in the context of one's community and culture, is essential for achieving environmental stewardship. Great Lakes B-WET responds to regional education and environmental priorities through local implementation of competitive grant funds. Please see regional funding opportunities for priorities and eligibility details.

**National Ocean Service (NOS) - [Scientific Support Coordinator and Regional Resource Coordinator](#)**

NOAA's Office of Response and Restoration (OR&R) brings decades of experience, technical expertise and scientific analysis in response to oil and hazardous chemical spills from local emergencies to events that draw national attention. Eleven regionally based Scientific Support Coordinators (SSCs) harness the input of a multi-disciplinary team to address issues such as oil slick trajectory forecasting, environmental tradeoffs, best practices, resources at risk, oil science and properties, and chemical hazard assessment to reduce risks to coastal habitats and resources. The SSC works directly with the U.S. Coast Guard and the U.S. Environmental Protection Agency to provide critical scientific support to the Federal On-Scene Coordinator. OR&R also helps develop preparedness plans that identify spill response actions with the greatest environmental benefit and trains hundreds of members of the response community each year on the scientific and technical aspects of spills.

OR&R's Regional Resource Coordinators (RRCs) provide scientific and technical expertise and timely response to oil spills or hazardous materials releases to collect information, samples, and evidence that are time dependent and critical to support natural resource damage assessments throughout the coastal US. RRCs work on multi-disciplinary scientific, economic, and legal teams and are responsible for determining and quantifying injuries to NOAA trust natural resources through determination of injuries and pathway, and demonstration of causal mechanisms. The goal of the RRCs efforts is to determine, often through the Damage Assessment, Remediation, and Restoration Program, the appropriate amount and type of restoration required to restore injured NOAA trust resources and compensate the public for their lost use. To date, DARRP and co-trustees have recovered \$6.5M for restoration of natural resources injured by a waste site in Minnesota.

**National Ocean Service (NOS) – OR&R [Environmental Sensitivity Index \(ESI\) maps/data](#)**

Environmental Sensitivity Index (ESI) maps are an OR&R product that provides oil spill responders and planners with a concise summary of coastal resources that could be at risk if an oil spill occurs nearby. ESI maps were originally created for the Great Lakes between 1985-1994 (depending on region) and had not been updated for decades due to limited resources. In 2020, with funding from the EPA through the Great Lakes Restoration Initiative, OR&R completed an update of the sensitivity maps/data for the Straits of Mackinac and the St. Clair-Detroit River System. OR&R recently established a new agreement with the U.S. Coast Guard to update the ESI maps for two more regions: St. Marys River, connecting Lake Superior to Lake Huron, and St. Lawrence River, from its start in Lake Ontario to the U.S./Canadian Border. These ESI updates will be completed by mid-2021. Spill responders and planners for the Great Lakes region and Canada will benefit from the updated sensitivity data. OR&R continues to seek opportunities to update these key components of



emergency response planning, preparedness, and response. When completed, the ESI maps and data will be available for download from the OR&R website, as well as included in the Environmental Response Management Application (ERMA®) for the Great Lakes.

**National Ocean Service (NOS) – [Great Lakes Environmental Response Management Application](#)**

Assessing important spatial information and designing successful restoration projects rely upon interpreting and mapping geographic information, including the location, duration, and impacts from oil spills, other hazardous materials, or debris released into the environment. Great Lakes Environmental Response Management Application (ERMA®) is an online mapping tool that integrates both static and real-time data, such as Environmental Sensitivity Index maps, ship locations, weather, and ocean currents in a centralized, easy-to-use format for environmental responders and decision makers.

**National Ocean Service (NOS) - [Marine Debris Projects and Partnerships](#)**

The NOAA Marine Debris Program (MDP) leads national and international efforts to research, prevent, and reduce the impacts of marine debris. The program supports marine debris removal, prevention, and research projects in partnership with state and local agencies, tribes, non-governmental organizations, academia, and industry. The MDP Great Lakes Regional Coordinator supports coordination efforts with regional stakeholders, provides support to grant-funded projects, tracks progress of projects, and conducts regional marine debris outreach to local audiences. The MDP has worked with Great Lakes stakeholders to develop the Great Lakes Marine Debris Action Plan, which provides a road map for strategic progress in making the Great Lakes, its coasts, people, and wildlife free from the impacts of marine debris.

**National Ocean Service (NOS) - [U.S. Integrated Ocean Observing System \(Great Lakes Observing System\)](#)**

The U.S. Integrated Ocean Observing System, or IOOS®, is a federally and regionally coordinated observing system with 17 interagency and 11 regional partners. The System addresses regional and national needs for coastal, ocean, and Great Lakes data and information. This includes gathering and disseminating regional observations; data management; modeling and analysis; education and outreach; and research and development. The Great Lakes Observing System (GLOS), one of the 11 IOOS regional coastal ocean observing systems, provides public access to critical, real-time and historical data and information about the Great Lakes, St. Lawrence River and interconnecting waterways for use in managing, safeguarding and understanding these immensely valuable freshwater resources. GLOS is intended to gather and integrate chemical, biologic and hydrologic data, and monitor lake conditions and trends over time.

**National Ocean Service (NOS) - Students for [Zero Waste Week](#)**

Students are inviting their local communities to "Go Green and Think Blue" by joining them in the annual *Students for Zero Waste Week campaign*. During this campaign led by the Office of National Marine Sanctuaries, students focus on reducing land-based waste in order to protect the health of local marine environments. These young leaders are raising awareness of how single-use plastic and other types of litter affect the health of local watersheds, national marine sanctuaries, and the ocean. In addition, some schools are looking at ways to reduce their energy use on campus with hopes of raising awareness of how the burning of fossil fuels also impacts the health of the ocean.

**National Ocean Service (NOS) - [Navigation Manager](#)**

NOAA's navigation managers work directly with pilots, port authorities, and recreational boating organizations in Michigan. They help identify the navigational challenges facing marine transportation in Michigan and provide NOAA's resources and services that promote safe and efficient navigation. Navigation managers are on call to provide expertise and NOAA navigation response coordination in case of severe coastal weather events or other marine emergencies. The Office of Coast Survey has a navigation manager in Cleveland, OH, to support mariners and stakeholders in the Great Lakes.

**National Ocean Service (NOS) - [Navigation Response Team](#)**

The Office of Coast Survey (OCS) maintains the nation's nautical charts and publications for U.S. coasts and the Great Lakes. OCS navigation managers are strategically located in U.S. coastal areas to provide regional support to federal and state agencies in order to assist with navigational challenges. The Office of Coast Survey's Navigation Response Branch (NRB) conducts routine and emergency hydrographic surveys; and working with the regional Navigation Managers, navigation response teams (NRT) work around-the-clock after storms to speed the reopening of ports and waterways. During emergency response, the NRTs provide time-sensitive information to the U.S. Coast Guard or port officials, and transmit data to NOAA cartographers for updating the Coast Survey's suite of navigational charts. Mobile integrated survey team (MIST) can be applied to a vessel of opportunity to provide response capability in the Great Lakes.

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## **Statewide**

### **National Ocean Service (NOS) - [Regional Geodetic Advisor](#)**

The Regional Geodetic Advisor is a National Ocean Service (NOS) employee that resides in a region and serves as a liaison between the National Geodetic Survey (NGS) and its public, academic and private sector constituents within their assigned region. NGS has a Regional Geodetic Advisor stationed in Chanhassen, Minnesota serving the Northern Plains region – Iowa, Minnesota, Nebraska, North Dakota, and South Dakota. The Geodetic Advisor provides training, guidance and assistance to constituents managing geospatial activities that are tied to the National Spatial Reference System (NSRS), the framework and coordinate system for all positioning activities in the Nation. The Geodetic Advisor serves as a subject matter expert in geodesy and regional geodetic issues, collaborating internally across NOS and NOAA to ensure that all regional geospatial activities are properly referenced to the NSRS.

### **National Weather Service - [NEXRAD \(WSR-88D\) Systems](#)**

NEXRAD is used to warn the people of the United States about dangerous weather and its location. This radar technology allows meteorologists to warn the public to take shelter with more notice than ever before. The NEXRAD network provides significant improvements in severe weather and flash flood warnings, air traffic safety, flow control for air traffic, resource protection at military bases, and management of water, agriculture, forest, and snow removal. NEXRAD radar has a range of up to 250 nautical miles, and can provide information about wind speed and direction, as well as the location, size, and shape of precipitation. There are 159 operational NEXRAD radar systems deployed throughout the United States and overseas, of which two are in Minnesota.

### **National Weather Service (NWS) - [Automated Surface Observing Systems Stations](#)**

The Automated Surface Observing Systems (ASOS) program is a joint effort of the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). ASOS serves as the Nation's primary surface weather observing network. ASOS is designed to support weather forecast activities and aviation operations and, at the same time, support the needs of the meteorological, hydrological, and climatological research communities. ASOS works non-stop, updating observations every minute, 24 hours a day, every day of the year observing basic weather elements, such as cloud cover, precipitation, wind, sea level pressure, and conditions, such as rain, snow, freezing rain, thunderstorms, and fog. There are 15 ASOS stations in Minnesota.

### **National Weather Service (NWS) - [Cooperative Observer Program Sites](#)**

The National Weather Service (NWS) Cooperative Observer Program (COOP) is truly the Nation's weather and climate observing network of, by and for the people. More than 10,000 volunteers take observations on farms, in urban and suburban areas, National Parks, seashores, and mountaintops. The data are representative of where people live, work and play. The COOP was formally created in 1890 under the NWS Organic Act to provide observational meteorological data, usually consisting of daily maximum and minimum temperatures, snowfall, and 24-hour precipitation totals, required



to define the climate of the United States and to help measure long-term climate changes, and to provide observational meteorological data in near real-time to support forecast, warning and other public service programs of the NWS. The data are also used by other federal (including the Department of Homeland Security), state and local entities, as well as private companies (such as the energy and insurance industries). In some cases, the data are used to make billions of dollars' worth of decisions. For example, the energy sector uses COOP data to calculate the Heating and Cooling Degree Days which are used to determine individuals' energy bills monthly. There are 353 COOP sites in Minnesota.

**National Weather Service (NWS) - [NOAA Weather Radio All Hazards Transmitters](#)**

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service (NWS) forecast office. NWR broadcasts official NWS warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Working with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "All Hazards" radio network, making it the single source for comprehensive weather and emergency information. In conjunction with federal, state, and local emergency managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages).

Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the NWS. NWR includes 1,100 transmitters covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. There are 37 NWR transmitters in Minnesota.

**NOAA Office of Education — [Environmental Literacy Program](#)**

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In Minnesota, ELP supports the American Meteorological Society's DataStreame courses for K-12 educators through a grant and in-kind support. These courses use weather, climate, and the ocean as contexts for teaching science and improving understanding about the Earth system.

**Office of Oceanic and Atmospheric Research (OAR) – [Minnesota Sea Grant College Program](#)**

The National Sea Grant College Program (Sea Grant) is a federal-university partnership administered by NOAA that integrates research, extension outreach, and education. Sea Grant forms a network of 34 programs in all U.S. coastal and Great Lakes states, Puerto Rico, Lake Champlain, and Guam. The Minnesota Sea Grant Program, based at the University of Minnesota Duluth, provides the people, tools, and the technology to help maintain and enhance lakeshore and aquatic economies and resources. Minnesota Sea Grant is made up of researchers and educators who focus on discovering solutions to problems facing Lake Superior and Minnesota's inland waters. The public, industry, and policy makers are kept informed on issues related to aquaculture, aquatic invasive species, fisheries, aquatic education, contaminants, and fisheries through a series of publications including Minnesota Sea Grant's newsletter, the "Seiche". Current projects focus on healthy coastal ecosystems, sustainable fisheries and aquaculture, resilient communities and economies, and environmental literacy and workforce development. The administrative offices of Minnesota Sea Grant are located in Duluth, Minnesota.

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